EDITORIAL

THE FUTURE OF ENGINEERING

Many of us have thought of and discussed our future with respect to the engineering field. We spend from four to six years obtaining our technical education and we wonder just what we shall accomplish by means of it. Our advancement and accomplishments will depend largely on our outlook and aims.

President-elect Herbert Hoover states that service to civilization and the progress of economic development should be the guiding light for the engineer, regardless of what branch of engineering he may be in. We quote from an article by Mr. Hoover in *The Professional Engineer:*

"Engineering has become the most difficult profession in the world. One which requires exhaustive study and training, and which eliminates more men in its course of training and subsequent practical application of learning, than probably any other profession.

"There was a time when law was looked upon as the greatest of the professions and as the most important avenue leading to public life and service. That was the period of history when the development of law meant fundamentally the development of liberty. But with the completion of the safeguards of liberty and the turn in the development of civilization toward problems of comfort, the profession of engineering has become, or should have become, dominant. The engineer should show the same devotion to public service that the legal profession has rendered to this country for these many years.

"The engineer has been a busy person for these last 30 or 40 years during the time in which his profession has come to dominate the land. He has not been willing to give much time or thought to matters of wide public interest, and he has allowed various persons to dictate the character of engineering, at least when it has come to public questions. Yet it is possible for the 200,000 trained and professional engineers of America to exert the dominant thought of those questions without outside dictates if they will. If they would do so, the whole approach to our public questions would be enormously modified—by facts. I do not intend this statement to apply solely to national questions because the most of our problems are local, and the engineers of each locality should be on guard to offer their advice in order that these questions shall be rightly solved in the interest of the public.

"The engineer has a great purpose, one far apart from his daily activities. The very character of his profession is that of service and in this he is not limited to the immediate problems at hand, but is given the opportunity of extending that service far beyond the limits of daily tasks

into the fields of civic and national affairs." . . . .

The foremost idea in the minds of most of us is probably to win "fame and fortune." It is necessary that we earn a certain amount of money in order to live but if we do our work well, add something to the development and progress of civilization, we will gradually raise the engineering profession to a higher plane, and the monetary reward will take care of itself.

An engineer is taught and trained to analyze a problem from the fundamental issues and this developed analytical power should lend itself to our civic and national problems. Economic progress is dependent, to a great extent, on the engineer and he should certainly help to direct this progress.

We might feel, when we see the figure representing our annual engineering graduating class, that the field is becoming too crowded but there certainly can not be enough men trained in technical schools to cause an alarming condition throughout the country. New fields of endeavor are constantly being opened to the technical graduate; opportunities are more abundant than they have ever been before. The engineer's field of service is wide and in order to be of value to himself he must first be of value to others.

WHAT NEXT IN AVIATION?

The army plane, Question Mark, has broken all endurance records by staying in the air 150 hours 40 minutes and 15 seconds. The plane established a new time record but just what other records will be officially allowed is yet to be determined. This was an epochal flight, for besides being a remarkable demonstration of motor stamina proved the feasibility of refueling in mid-air.

Army officials with the crew of five men who made the flight will be able to establish certain facts from this test flight that have never been ascertained before. The flight was planned efficiently and made efficiently with the idea of contributing valuable data to the aeronautical industry and the feat is a marked contrast to some of our recent long distance flights from the safety standpoint. No lives were unnecessarily endangered but the information it will give will be more valuable than all of the overseas flights made up to the present time.

The autopsy on the plane will probably reveal the real benefits to aviation. The three sturdy motors, property of the United States Army, may be turned back to their builders, the Wright Aeroauntical Corporation, for examination, or the Army may conduct it but every part of the motors will be subjected to a thorough examination to see what effect the constant grind of 150 hours under load has had on them. Microscopes and delicate measuring instruments of various sorts will be used in the examination. There will surely be no guesswork.

Motor trouble is the chief bugaboo in the aeronautical industry and although this experiment and the subsequent examinations may not result directly in the manufacture of virtually indestructible motors, the information gained will result in the elimination of a great many of the faults of present motor design.

Aeronautical engineers are gradually extending the limits of usefulness of the airplane and there is little doubt that the flight of the Question Mark measures a long stride forward in the science of aviation, and the lessons learned will do much to hasten the day of reliable and speedy long distance air transportation for commercial and military utility.

JUST CARELESS

While walking through some of our engineering laboratories one can notice a machine now and then that it not properly guarded. There may be an open train of gears or the end of an electric motor shaft within reach of one who is working on the machine. Guards should be installed on all moving machinery but in some cases this has been neglected.

This is not a general condition in our laboratories but an open machine here and there may tend to make the average student more careless than he would ordinarily be. If he can lean against some of the machines without danger he may by chance lean against the unguarded ones and an unfortunate accident must result.

Everyone should learn to be careful when working around machinery, especially high speed machinery, for a moment of carelessness may result in the loss of a finger or some other serious injury. Proper guards will not always eliminate the possibility of an injury when a negligent operator is running the machine so the greater part of the responsibility lies in the operator.

Loose clothes are easily caught in moving machinery causing in some cases serious injuries. Long flapping neckties are especially dangerous. Working around grinding wheels or chipping machines of any type is risky unless one wears goggles. Molten metal should not be handled unless one wears gloves, goggles, and asbestos leggings. Be alert at all times—do not get so tired that you must learn on a revolving shaft or place your hand in a set of gears.

All machines should be made as safe as possible but the operator must think! He is the one who must suffer most in case of an accident.

YAWNING

Do you like to talk to aynone who continually yawns and acts as though he was too sleepy to listen to you or else bored with what you were saying? Most people do not but some of us attend classes and act just that way or possibly go to sleep. This must be unpleasant for the one who is conducting the class. The instructor is not the loserd but it creates a bad impression.

While we are attending classes we are no doubt forming habits that will stick with us after we leave the University, so we should try to be alert at all times. The chairs are fairly comfortable and they are certainly poor beds so everyone should be able to keep awake and be interested in what is being said. When we are sleepy and apparently uninterested just look around and see how many others are apparently enjoying the lecture. If they are getting something valuable from the lecture we should be able to.

It costs each one about the same amount of money to attend the University but the fellow who loses the time spent in the lecture room certainly gets less for his dollar than the one who takes advantage of all that transpires. Think it over.